UINTAH BASIN AIR QUALITY RESEARCH PROJECT

2018 REPORT

Seth Lyman, PhD

Director, Bingham Research Center

Research Associate Professor, Department of Chemistry and Biochemistry

Utah State University

UtahStateUniversity

BINGHAM ENTREPRENEURSHIP & ENERGY RESEARCH CENTER

Outline

1. Summary of project purpose and mission
   (2 slides)

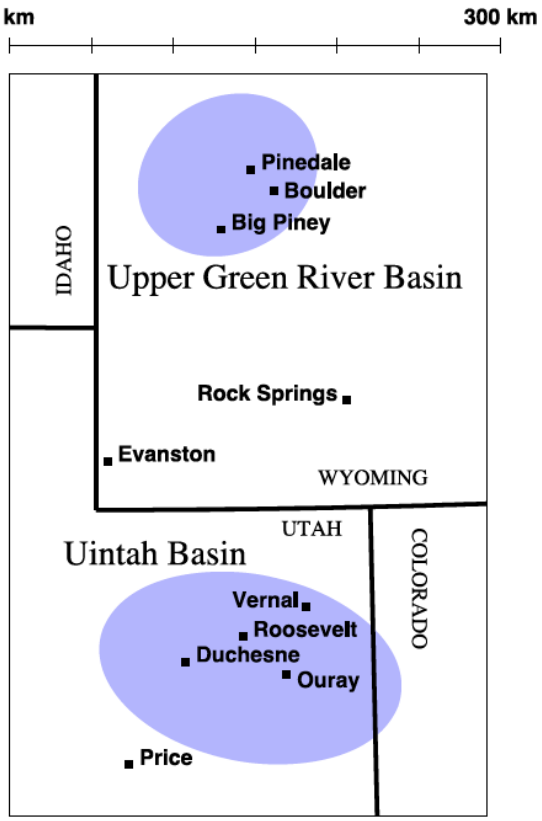
2. Recent non-attainment designation
   (3 slides)

3. Highlights from current activities
   (3 slides)

**Full written report submitted each November

Wintertime Ozone is Scientifically Unique and Uniquely Tied to the Uintah Basin's Economy

- Wintertime ozone only occurs in two places in the world, only been known to science for ~10 years
- Majority of winter ozone precursors are emitted from local oil and gas industry, which accounts for about 60% of the Uintah Basin economy
- Better scientific information will help industry and regulators make more effective and cost-effective decisions



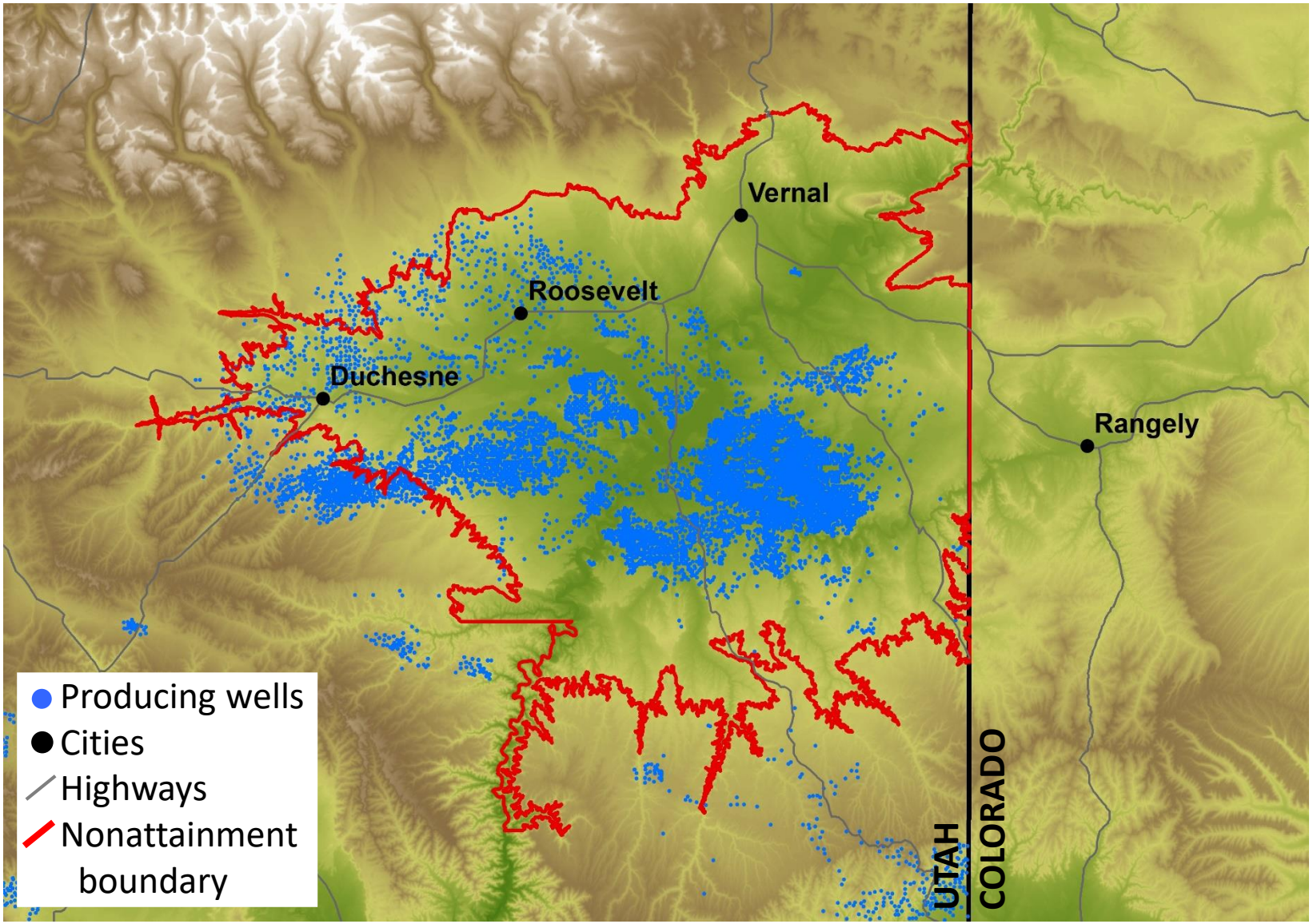
Project Mission and Goals

Mission: Conduct research that can be used by industry and government to develop efficient and effective solutions to Uintah Basin air quality problems.

To accomplish this, we are tasked by the Utah Legislature to:

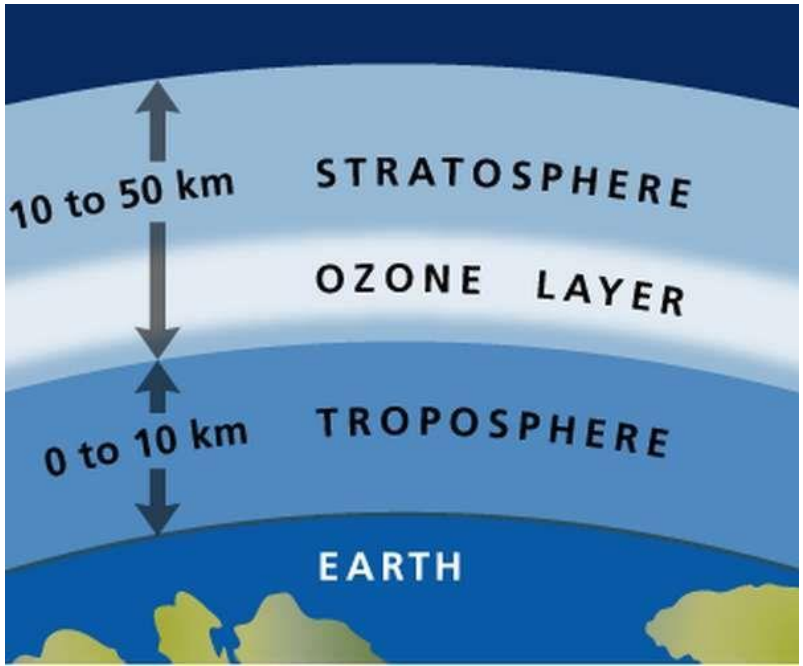
1. Collect and analyze ambient air measurements
2. Work to improve air quality computer models
3. Characterize emissions sources through measurements and analysis

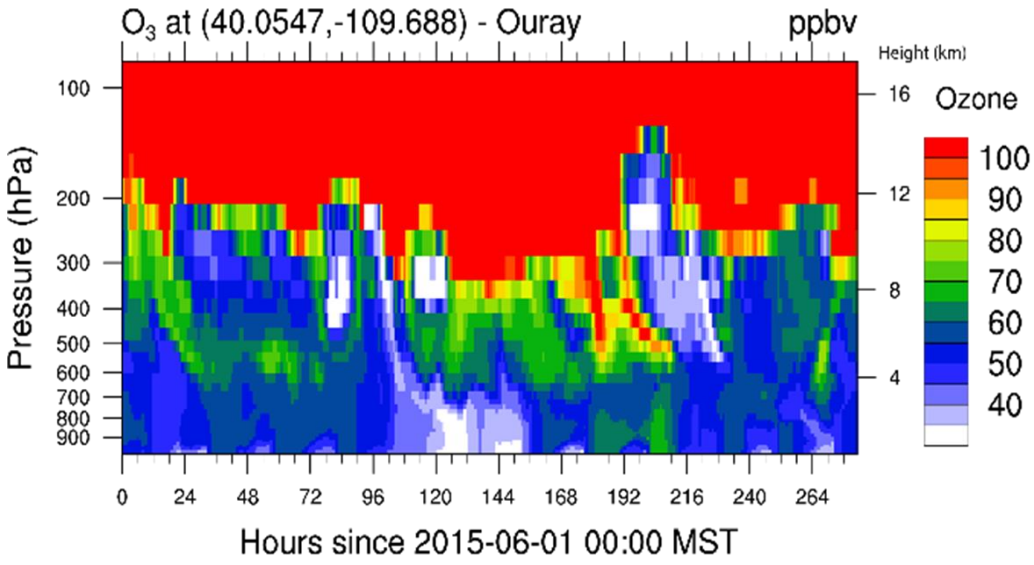
EPA Recently Designated Ozone Nonattainment Area in the Uintah Basin



Designated as Marginal, the Lowest Classification, Because of Our Team's Work

- We identified two days in which high ozone was attributable to stratospheric intrusion
- We worked with regulatory agencies, and agencies removed those days from monitoring record

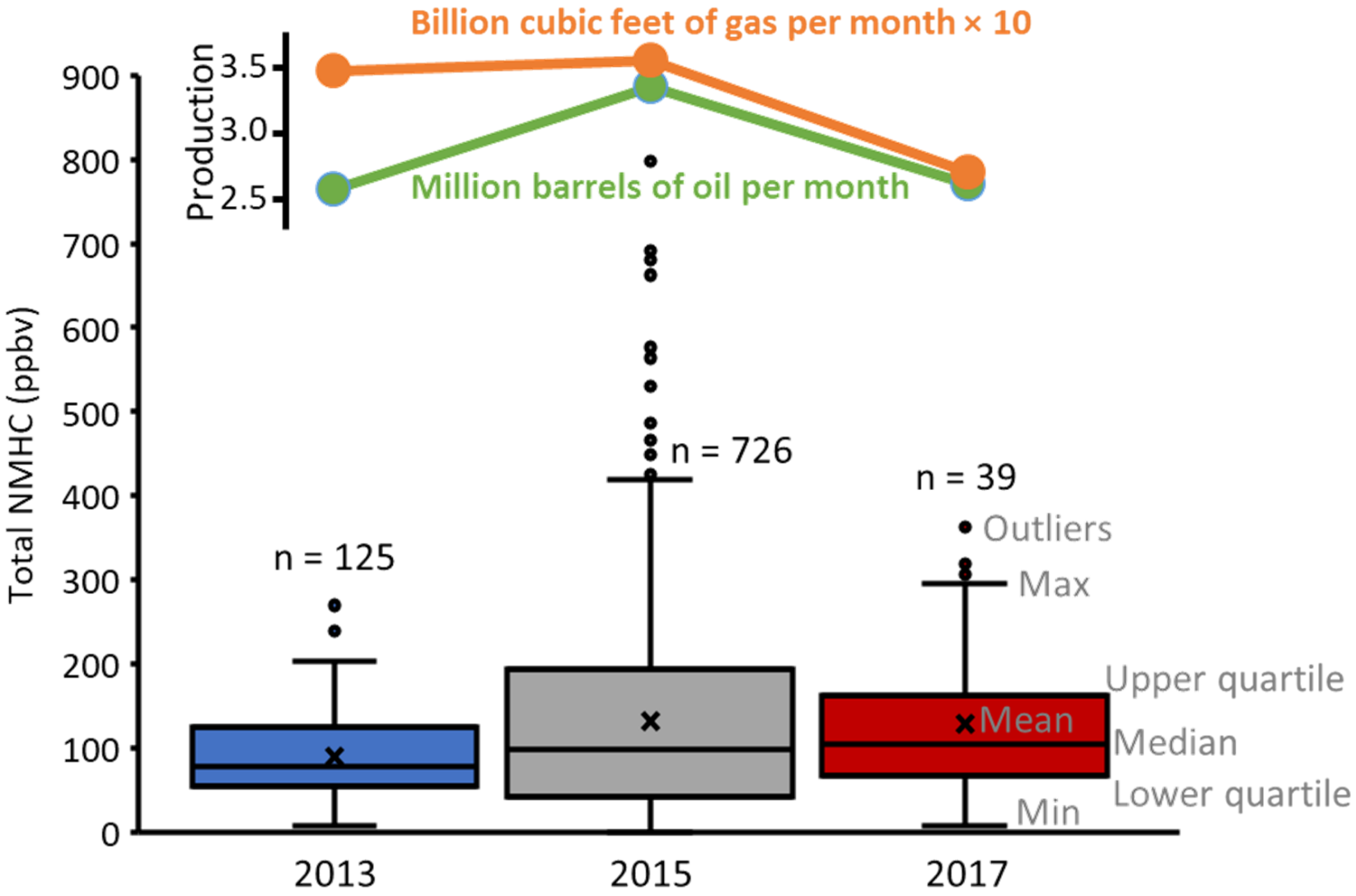




Marginal vs. Moderate Nonattainment

- Less strict emission offsets for new major sources
- Fewer proscriptive regulatory requirements
- Three years to bring ozone into attainment using more flexible, potentially more cost-effective, emissions reductions

Have Increased Regulations Resulted In Decreased Ozone-forming Emissions In The Uintah Basin?



Development of Winter Ozone Forecasts To Provide Accurate Alerts to Industry

Sign Up for Winter Ozone Alerts!

The USU Bingham Research Center has partnered with the Utah Department of Environmental Quality (UDEQ) to provide email alerts when ozone exceeding EPA standards is forecast for the Uintah Basin. The purpose of these alerts is to provide the oil and gas industry with real-time information about air quality in the Basin so they can take action to reduce emissions of ozone-forming pollutants.

Sign up using the form below. When you sign up, we will send you emails:

1. Two days in advance of when moderate air quality is forecast (unless there is no snow on the ground, or unless you opt to only receive email if exceedance days are forecast),
2. Two days in advance of when ozone exceedance days are forecast (unless there is no snow on the ground),
3. When an inversion episode ends (or if one was forecast but did not materialize).

Name*

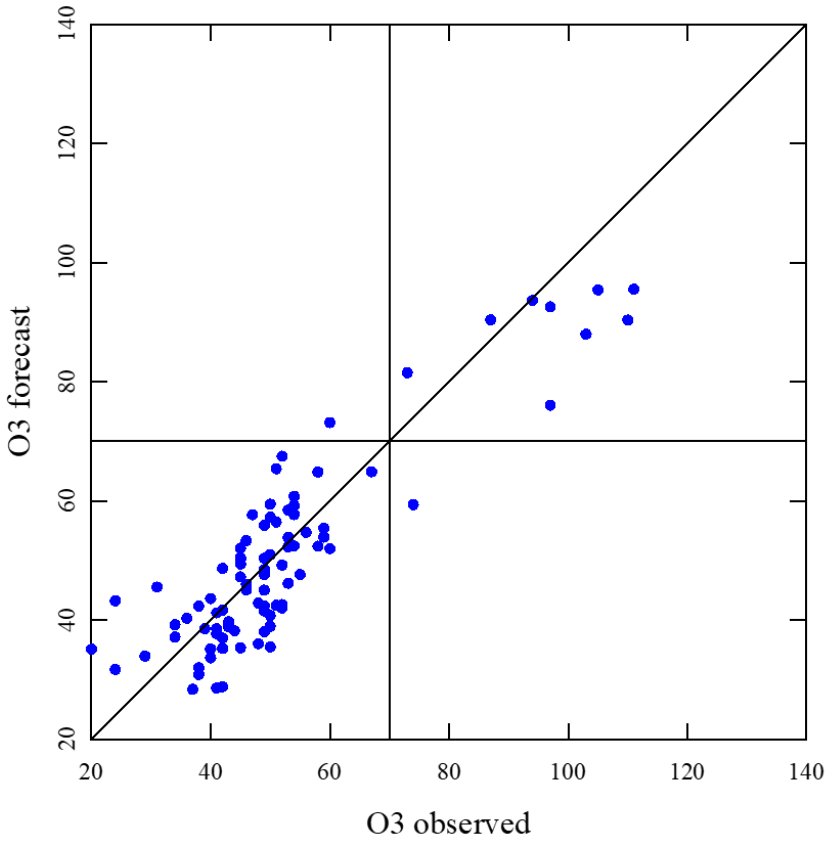
Company*

Email*

Receive email for forecast exceedance days only?

Subscribe

You will receive a subscription confirmation email after you submit this form.

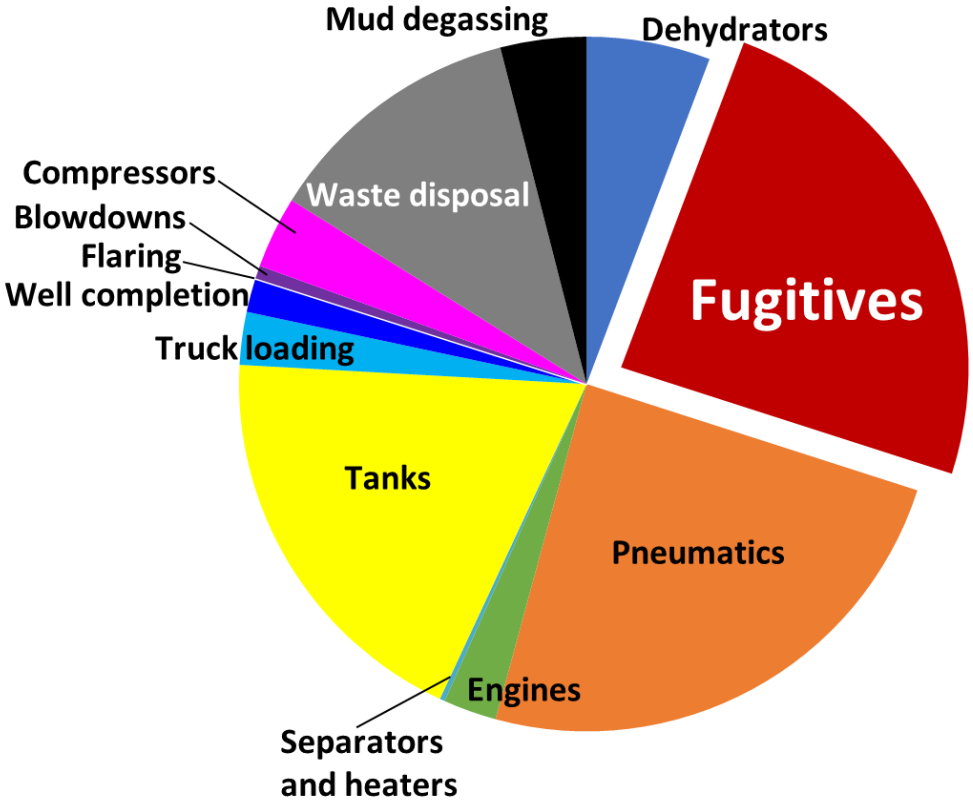


Gas Detection Camera Loaned to Companies To Find and Repair Leaks

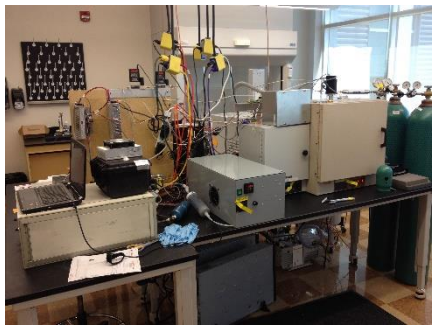
ULend

Utah Department of Environmental Quality
TriCounty Health
Utah State University

Optical Gas Imaging Loan Program



Thank You



Additional funding provided by:
- Uintah Impact Mitigation Special Service District
- Utah Division of Air Quality
- Ute Indian Tribe
- Bureau of Land Management
- U.S. Department of Energy
- Environmental Protection Agency
- National Science Foundation

Data and site access provided by many local energy companies

seth.lyman@usu.edu

binghamresearch.usu.edu